

# Appendix A

## 10-cell Bit Patterns and Timing for SSR reading, bucking and boosting

Action	Time	Bit Pattern																Hex Code
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Read																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 1		0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	2803
Settle SSR's	3ms																	
Read cell 1																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 2		0	0	1	1	0	0	0	0	0	0	0	0	0	1	1	0	3006
Settle SSR's	3 ms																	
Read cell 2																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 3		0	0	1	0	1	0	0	0	0	0	0	0	1	1	0	0	280C
Settle SSR's	3 ms																	
Read cell 3																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 4		0	0	1	1	0	0	0	0	0	0	0	1	1	0	0	0	3018
Settle SSR's	3 ms																	
Read cell 4																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 5		0	0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	2830
Settle SSR's	3 ms																	
Read cell 5																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 6		0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	0	3060

10-cell Bit Patterns and Timing for SSR reading, bucking and boosting																		
Action	Time	Bit Pattern																Hex Code
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Settle SSR's	3 ms																	
Read cell 6																		

# 10-cell Bit Patterns and Timing for SSR reading, bucking and boosting

Action	Time	Bit Pattern																Hex Code
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 7		0	0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	28C0
Settle SSR's	3 ms																	
Read cell 7																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 8		0	0	1	1	0	0	0	1	1	0	0	0	0	0	0	0	3180
Settle SSR's	3 ms																	
Read cell 8																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 9		0	0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	2B00
Settle SSR's	3 ms																	
Read cell 9																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 10		0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	3600
Settle SSR's	3 ms																	
Read cell 10																		
Buck																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 1		0	1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	4803
Settle SSR's	3ms																	
Read cell 1																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 2		0	1	0	1	0	0	0	0	0	0	0	0	0	1	1	0	5006
Settle SSR's	3 ms																	
Read cell 2																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000

# 10-cell Bit Patterns and Timing for SSR reading, bucking and boosting

Action	Time	Bit Pattern																Hex Code
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Settle after turn off	600 us																	
Select cell 3		0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	480C
Settle SSR's	3 ms																	
Read cell 3																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 4		0	1	0	1	0	0	0	0	0	0	0	1	1	0	0	0	5018
Settle SSR's	3 ms																	
Read cell 4																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 5		0	1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	4830
Settle SSR's	3 ms																	
Read cell 5																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 6		0	1	0	1	0	0	0	0	0	1	1	0	0	0	0	0	5060
Settle SSR's	3 ms																	
Read cell 6																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 7		0	1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	48C0
Settle SSR's	3 ms																	
Read cell 7																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 8		0	1	0	1	0	0	0	1	1	0	0	0	0	0	0	0	5180
Settle SSR's	3 ms																	
Read cell 8																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 9		0	1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	4B00

# 10-cell Bit Patterns and Timing for SSR reading, bucking and boosting

Action	Time	Bit Pattern																Hex Code
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Settle SSR's	3 ms																	
Read cell 9																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 10		0	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	5600
Settle SSR's	3 ms																	
Read cell 10																		
<b>Boost</b>																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 1		1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	1	8803
Settle SSR's	3ms																	
Read cell 1																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 2		1	0	0	1	0	0	0	0	0	0	0	0	0	1	1	0	9006
Settle SSR's	3 ms																	
Read cell 2																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 3		1	0	0	0	1	0	0	0	0	0	0	0	1	1	0	0	880C
Settle SSR's	3 ms																	
Read cell 3																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 4		1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	0	9018
Settle SSR's	3 ms																	
Read cell 4																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 5		1	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0	8830
Settle SSR's	3 ms																	

# 10-cell Bit Patterns and Timing for SSR reading, bucking and boosting

Action	Time	Bit Pattern																Hex Code
		15	14	13	12	11	10	9	8	7	6	5	4	3	2	1	0	
Read cell 5																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 6		1	0	0	1	0	0	0	0	0	1	1	0	0	0	0	0	9060
Settle SSR's	3 ms																	
Read cell 6																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 7		1	0	0	0	1	0	0	0	1	1	0	0	0	0	0	0	88C0
Settle SSR's	3 ms																	
Read cell 7																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 8		1	0	0	1	0	0	0	1	1	0	0	0	0	0	0	0	9180
Settle SSR's	3 ms																	
Read cell 8																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 9		1	0	0	0	1	0	1	1	0	0	0	0	0	0	0	0	8B00
Settle SSR's	3 ms																	
Read cell 9																		
Zero all outputs		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0000
Settle after turn off	600 us																	
Select cell 10		1	0	0	1	0	1	1	0	0	0	0	0	0	0	0	0	9600
Settle SSR's	3 ms																	
Read cell 10																		